

## CLAIMS

What I claim is:

### CLAIM 1

An equal response rear axles for vehicles including a front engine and a rear wheel drive with a left wheel and a right wheel each having tires mounted thereon and a drive shaft coupled to the rear axles comprising:

a left rear wheel and a right rear wheel;

a right rear axle and a left rear axle connected to the right rear wheel and left rear wheel respectively at one end and to the drive shaft at the other end wherein the axles have the same effective length and wherein the left axle has a predetermined smaller diameter than the right axle to provide equal torque to the wheels.

### CLAIM 2

An equal response rear axles for vehicles in accordance with Claim 1 wherein:

the left axle is shorter and includes a smaller diameter than the right axle to provide equal torque to the wheels.

### CLAIM 3

An equal response rear axles for vehicles in accordance with Claim 1 wherein:

the diameter of the left axle is based upon the torsional stiffness of the axle to deliver torque to the left wheel that equals the torque delivered to the right wheel.

### CLAIM 4

An equal response rear axles for vehicles in accordance with Claim 1 wherein:

the smaller diameter of the left axle is sized using the static loaded radius from the left rear wheel from the center of the axle to the ground; and,

to determine the diameter of the right side axel the static loaded radius is used from the right rear wheel from the center of the axle to the ground.

### CLAIM 5

An equal response rear axle for vehicles in accordance with Claim 1 wherein:

the right rear axle and the left rear axle have the same spring rates.